

REMARKS

The Office Action mailed January 6, 2010 has been carefully considered. Reconsideration in view of the following remarks is respectfully requested.

Interview Record

Applicants gratefully acknowledge the courtesy and consideration extended to Applicants' undersigned representative during the telephonic interview with Examiner Kerns on May 5, 2010. The substance of the interview was filed May 6, 2010 in an Interview Summary form, to which Applicants concur and incorporate by reference.

As stated by the Examiner, independent claim 1 was the focus of the discussion, as it relates to prior art reference Rohn (US 2,090,075) which was cited in the last Office Action in addition to Simcock (EP 0 403 138). The Examiner agreed with Applicants that Rohn did not provide a specific disclosure of a power source generating "the current of the first and second frequency components of the variable current" as required by claim 1. Claims 4-6 of Rohn refer to "means for supplying alternating current" or "means for passing sufficient alternating current," but these means cannot be interpreted as a power supply that generates the current of the first and second frequency components of the variable current passing through an inductor. The Examiner suggested these "means" may refer to the coils themselves, or some other element that is undisclosed in Rohn, because no such power supply is shown in Figure 1 or described in the Rohn specification.

No proposed amendments were discussed, and no exhibits were shown during the interview.

Rejection(s) Under 35 U.S.C. §103(a)

Claims 1-6, 9, and 12-14 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Simcock (EP 0403 138) in view of Rohn (U.S. pat. no. 2,090,074).

The Examiner states that Simcock "does not specifically disclose that the current of the first and second components of the variable current are both generated by the (same) power source." (Office Action at p. 4; emphasis in original.) As discussed in the response dated August 10, 2009 to the prior Office Action, Simcock contains no indication or teaching that the power supply device 36 provides current or power for both the melting circuit 16 and the agitation circuit 18. Rather, the application states that circuits 16 and 18 are "separately powered and

regulated” (col. 2, ll. 54-58.) The agitation circuit 18 is powered by a three phase source 20 and controlled by voltage control 24 (col. 3, ll. 1-6). The ’138 specification states that the “[m]edium frequency melting power input [from 36] cannot affect the transformer device 26 as the secondary terminals of the latter are effectively in parallel at medium frequency” (col. 3, l. 58-col. 4, l. 3).

To remedy the deficiency in the Simcock reference, the Examiner introduced Rohn, and noted claims 4-6 of that reference which refer to a “means for supplying alternating current to two different frequencies to said induction coils” (claim 4), “means for supplying alternating current of two different frequencies to said windings” (claim 5), and “means for passing sufficient alternating current of high frequency through one of said coils to provide the desired heating to said molten metal and means for passing sufficient alternating current of a lower frequency through said second coil to provide the desired stirring to said molten metal” (claim 6). These disclosures in Rohn, however, do not disclose each of the missing elements of independent claim 1 which are not disclosed in Simcock.

Rohn describes a system involving multiple separate inductive windings, one of which is fed with a higher frequency, and the others are fed in a multi-phase manner with a lower frequency (Figure 1 and col. 1, ll. 44-55). Rohn does not describe or provide any details about the power source used to feed these two separate inductor coils. Under 35 U.S.C. § 112 para. 6, a “means plus function” claim “shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” In Rohn, while the claims refer to various “means,” the Rohn specification, including the claims, do not disclose any structure constituting a power source capable of generating the current of the high and low frequency components of a variable current which is to be fed through an inductor. Rather, Rohn makes no disclosure of a power source, and in any event, discloses no single current with high and low frequency components, and no means to generate such current. In Rohn, one inductor is fed with high frequency current, while another set of inductors is fed with a low frequency current. (Figure 1 and col. 1, ll. 44-55, col. 2, ll. 32-41, claims 1-6).

Rohn Claims 4-6 are consistent with the remainder of the Rohn specification which does not disclose a power source, or in particular a power source that meets the requirements of independent claim 1. Rohn claim 4, for example, discloses “an induction coil” and a separate “plurality of polyphase induction coils” (col. 3, ll. 38-41), and “means for supplying alternating current of two different frequencies to said induction coils” (col. 4, ll. 4-6). Rohn claim 5

provides essentially the same description, and claim 6 refers to two separate “means for passing” the high and low frequency current, respectively. In the interview of May 5, 2010, the Examiner suggested that the “means” might refer to the coils themselves, but in any event, claims 4-6 certainly do not disclose a power source that meets the limitations of independent claim 1.

Indeed, claims 4-6 of Rohm are inconsistent with, and teach away from, a power source that generates current for both high and low frequency components of a variable current. These claims describe a high frequency “induction coil”, and a separate set of low frequency “polyphase induction coils.” In claims 4-6, the “induction coil” is at substantially right angles to the “polyphase induction coils” (col. 4, ll. 1-4, 14-18, 26-33), which Rohm teaches is important if the induction coil carries a separate frequency from the polyphase induction coils (col. 1, ll. 48-55). Thus, in Rohm the high frequency current is separated from the low frequency current and there is no use or need for a variable current with both high and low frequency components.

Therefore, Rohm fails to remedy the shortcomings of Simcock with respect to claim 1. Claims 2-6, 9, and 12-14 variously depend, directly or indirectly, from independent claim 1 addressed above. Although claims 13-14 are method claims, they require “providing a device according to claim 1,” and therefore the claims are likewise patentable. Thus, claims 2-6, 9, and 12-14 are patentable over the combination of Simcock and Rohm.

Claims 7, 8, 10, and 11 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Simcock (EP 0403 138) in view of Rohm (U.S. pat. no. 2,090,074) and further in view of Eckert (U.S. pat. no. 5,968,223). These claims depend, directly or indirectly from independent claim 1 addressed above and are patentable for the same reasons.

Conclusion

In view of the preceding discussion, Applicants respectfully urge that the claims of the present application define patentable subject matter and should be passed to allowance.

If the Examiner believes that a telephone call would help advance prosecution of the present invention, the Examiner is kindly invited to call the undersigned attorney at the number below.

Please charge any additional required fees, including those necessary to obtain extensions of time to render timely the filing of the instant Amendment and/or Reply to Office Action, or credit any overpayment not otherwise credited, to our deposit account no. 50-3557.

Respectfully submitted,
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